

Abstract

Disclosed are bioanodes comprising a quaternary ammonium treated Nafion® polymer membrane and a dehydrogenase incorporated within the treated Nafion® polymer. The dehydrogenase catalyzes the oxidation of an organic fuel and reduces an adenine dinucleotide. The ion conducting polymer membrane lies juxtaposed to a polymethylene green redox polymer membrane, which serves to electro-oxidize the reduced adenine dinucleotide. The bioanode is used in a fuel cell to produce high power densities.

5